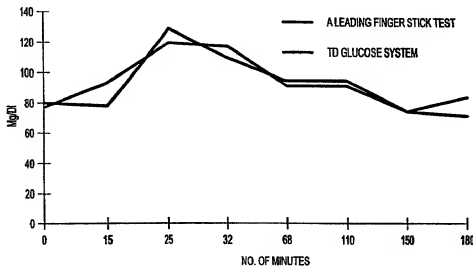




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(54) Title: **NONINVASIVE TRANSDERMAL SYSTEMS FOR DETECTING ANALYTES**



(57) Abstract

The present invention relates to noninvasive transdermal systems and methods for analyte extraction from a biological fluid within or beneath the skin, such as interstitial fluid, and detection of the analyte. More particularly, the present invention relates to noninvasive transdermal patches comprised of a wet chemistry component and a dry chemistry component. The wet chemistry component is a liquid transfer medium in the form of a gel layer for the extraction and liquid bridge transfer of the analyte of interest from the biological fluid within or beneath the skin to the dry chemistry component. The dry chemistry component is a super sensitive or conditioned membrane carrying a reagent system for interacting with the analyte of interest to generate an indicator molecule, e.g., color change, to confirm detection of the analyte, and methods of use thereof. The indicator molecule may be visually observed by the individual user or observed by an electronic interpretation component, such as a reflectance spectrophotometer for detection. A particular analyte of interest which may be detected accurately, reliably and quantitatively in accordance with the present invention is glucose. The noninvasive transdermal systems of the present invention are low in-cost and suitable for convenient use by non-medical personnel.